



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/890,116

11/20/2001

John H. Healey

9958-004-999

6037

57545 7590 03/09/2007
LAW OFFICES OF ALBERT WAI-KIT CHAN, LLC
141-07 20TH AVENUE, SUITE 604
WORLD PLAZA
WHITESTONE, NY 11357

EXAMINER

JAGOE, DONNA A

ART UNIT

PAPER NUMBER

1614

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

03/09/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 09/890,116	Applicant(s) HEALEY ET AL.	
	Examiner Donna Jagoe	Art Unit 1614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 77-115, 117 and 122-125 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 77-115, 117 and 122-125 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The amendment filed August 21, 2006 has been received and entered. Claims 77, 93 and 110-115 have been amended.

Claims 77-115, 117 and 122-125 are pending in this application.

Applicants' arguments, filed August 21, 2006 have been fully considered, but they are not deemed to be persuasive. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

Response to Arguments

Applicant's arguments with respect to claims 77-115, 117 and 122-125 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102/103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 77-115, 117 and 122-125 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Merck &

Art Unit: 1614

Co. WO 96/39107 and Sabokbar et al. and in further view of Remington's Pharmaceutical Sciences, 15th Edition, 1975, pages 1569-1570.

The claims are drawn to a composition comprising a monomeric bone cement component and a polymeric bone cement component and an anti-resorptive agent component to prevent loosening of the polymerized bone cement matrix from a living bone to which it is attached.

Sabokbar et al. teach a polymethylmethacrylate (PMMA) bone cement, mixed with the bisphosphonate, etidronate, to inhibit bone resorption (see abstract). Specifically, PMMA was mixed with crushed etidronate and then polymerized according to manufacturer's instructions (see Methods). The extent of resorption was significantly less in the PMMA with etidronate than in PMMA alone suggesting that incorporation of a bisphosphonate into bone cement to inhibit macrophage-osteoclast differentiation may effectively be used to control periprosthetic osteolysis (see discussion). Sabokbar et al. teach that bisphosphonates, included in bone cement may be used to prevent or to control the bone resorption seen in aseptic loosening (see discussion).

Merck and Co. teach the addition of further bisphosphonates to the cement, added to the polymeric base (page 9, lines 18-19). The bisphosphonate applicable in the cement includes the free acids and pharmaceutically acceptable salts and barium salts of alendronate, clodronate, tiludronate, YM 175, ibandronate, risedronate, piridronate, pamidronate or combinations thereof (see page 5). Inhibition of bone resorption is used to refer to bone loss, especially the inhibition of removal of existing bone either from the mineral phase and/or the organic matrix phase, through direct or

Art Unit: 1614

indirect alteration of osteoclast formation or activity (see page 6). The term "cement" encompasses the mixed cement composition containing all the ingredients and components prior to, during and after complete curing (see page 7). The PMMA beads have a substantially uniform particle size of about 5 to 20 microns average diameter (page 7 last paragraph). The polymer powder part can also contain a radiopaquing agent e.g. barium sulfate (page 8, 2nd paragraph). The amount of bisphosphonate is generally from 0.005 to 10 percent of the total cement composition.

It would have been obvious to one of ordinary skill in art at the time it was made to add additional bisphosphonates as cited in Merck and Co. Such a modification would have been motivated by the reasoned expectation of producing a bone cement/bisphosphonate composition which is effective in comprehensively preventing formation of osteoclasts and loosening of prosthetic implants.

Regarding applicant's remarks that when the particle size of the cement is about the same as the particle-size distribution of the anti-resorptive agent surprisingly prevents clumping and promotes even distribution of the anti-resorptive agent in the composition, Remington's Pharmaceutical Sciences, teaches that, in mixing powders, a large difference in particle size would tend to cause demixing (page 1570 1st full paragraph). Thus, when the particle sizes are similar, the powders would tend to stay mixed. It would have been made obvious to one of ordinary skill in art at the time it was made to employ similar particle sizes of different agents motivated by the teaching of Remington's Pharmaceutical Sciences that a large difference in particle size would tend to cause demixing of a composition of powders.

Art Unit: 1614

Please note that applicant's claims are directed to a composition. When the reference teaches a product that appears to be the same as, or an obvious variant of, the product set forth in a product-by-process claim although produced by a different process. See *In re Marosi*, 710 F.2d 799, 218 USPQ 289 (Fed. Cir. 1983) and *In re Thorpe*, 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). See also MPEP § 2113. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In *re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted) (Claim was directed to a novolac color developer. The process of making the developer was allowed. The difference between the inventive process and the prior art was the addition of metal oxide and carboxylic acid as separate ingredients instead of adding the more expensive pre-reacted metal carboxylate. The product-by-process claim was rejected because the end product, in both the prior art and the allowed process, ends up containing metal carboxylate. The fact that the metal carboxylate is not directly added, but is instead produced in-situ does not change the end product). In this case, the fact that the anti-resorptive agent is added to the polymeric component does not change the fact that the end product in both the prior art and the instant application are both a bone cement with anti-resorptive agent added. If applicant wants to claim the process of mixing, the patentability analysis would be different for "method of making" claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

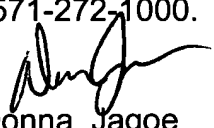
Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donna Jagoe whose telephone number is (571) 272-0576. The examiner can normally be reached on Monday through Thursday from 9:00 A.M. - 3:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel can be reached on (571) 272-0718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Art Unit: 1614

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Donna Jagoe
Patent Examiner
Art Unit 1614

March 1, 2007



ARDIN H. MARSCHEL
SUPERVISORY PATENT EXAMINER